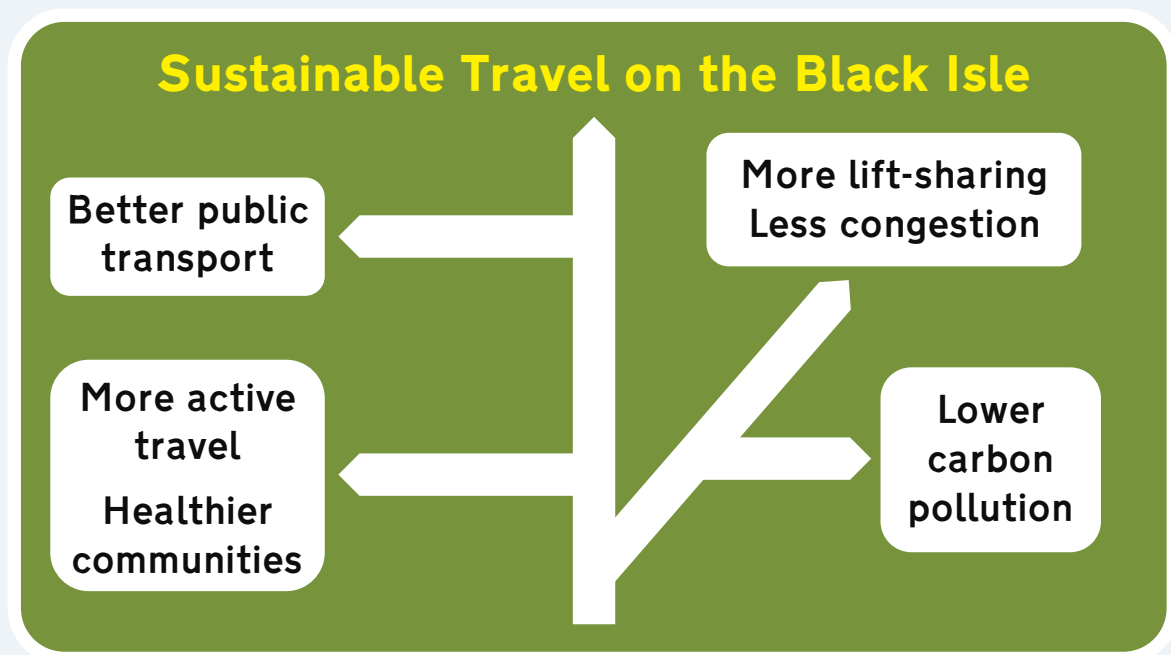


Baseline travel survey for Transition Black Isle's Million Miles project



Conducted April to June 2012



Executive summary



Transition Black Isle is an active group of volunteers who focus on raising awareness of the challenges of Peak Oil and Climate Change and managing projects on energy efficiency, local food and sustainable transport. In March 2012, Transition Black Isle was awarded a grant from the Scottish Government's Climate Challenge Fund for their Million Miles project. The aim is to encourage the 6,300 households on the Black Isle to reduce their annual car mileage by around 1%, which is equivalent to approximately one million miles. This ambitious target will be met by improving access to public transport, promoting lift sharing and encouraging active travel. The first phase of the project was to establish a baseline for travel on the Black Isle by conducting a survey. Around 8% of the 1,800 questionnaires distributed to local schools, markets and shops were returned by June 2012. The responses can be summarised as follows:

➤ Car travel

Almost all households own at least one car (97%), driving 13,600 miles per year on average;

➤ Public transport

The majority of households used public transport during the previous week (58%), with half travelling by bus and just over a quarter travelling by train;

➤ Air travel

Most households took at least one domestic, European or long-haul flight during 2011 (63%);

➤ Active travel

Almost all households took at least one journey by active travel in the previous week – 86% walked and 41% cycled – and the majority of households own at least one bike (83%).



Most respondents are interested in reducing their car mileage (71%), mostly to save money and because of concern over climate change. The two most frequent suggestions to make travel more sustainable were improvements to bus services and cycle paths. The total average distance travelled by each household surveyed is just over 27,000 miles per year, 48% of which is by car. This is equivalent to 7.3 tonnes of greenhouse gas emissions per household. Emissions from car travel accounts for 67% of the total travel footprint, which reinforces the need to encourage modal shifts to active travel and public transport whenever possible. It should be noted that the questionnaire had a limited scope and so the results should be interpreted with caution. Transition Black Isle intends to adapt the survey into a travel diary for the Million Miles project.

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1. Background to survey

1.1. Transition Black Isle

Transition Black Isle (TBI) was formed in February 2009 and later set up as a company limited by guarantee and registered charity. Membership is open to anyone who either lives or operates on the Black Isle and agrees with TBI's objectives:

1. Raise awareness of the issues associated with the twin challenges of Peak Oil and Climate Change and the consequent need to develop a low carbon, sustainable future through ethical, social, cultural, economic, environmental and community action;
2. Promote, encourage and support the development of education and research concerning areas affected by resource depletion;
3. Support and encourage local action on Peak Oil and Climate Change.

The group is managed by members with a broad range of expertise. Sub-groups of TBI manage projects related to food, energy and communications, including community markets, events and continuation of various initiatives started with grant assistance from the Scottish Government's Climate Challenge Fund.

The Black Isle is a peninsula in the Highlands bounded by the Cromarty and Beauly Firths to the north, south and east, and extending to the western edges of the settlements of Conon Bridge and Muir of Ord. The population is concentrated in and around eight villages, which are all dependent on services in Inverness and Dingwall. Like many rural areas in the Highlands, bus services on much of the Black Isle are limited and the only railway station is at Muir of Ord. This means that residents rely heavily on private cars.

1.2. The Million Miles project

There has been increasing interest in green transport options, particularly since both the Kessock and Cromarty Bridges will undergo major repairs in the coming years. Transition Black Isle organised community events in late 2011 to consult on ways to make local travel more sustainable. In view of the enthusiasm at these meetings, the group decided to put together an outline plan for a project to submit to the Climate Challenge Fund.

In March 2012, Transition Black Isle was awarded a grant of £195,000 from the Climate Challenge Fund for their Million Miles project. There are approximately 6,300 households on the Black Isle (estimated from Highland Council ward statistics). Assuming that each household drives around 15,000 miles a year, the total distance travelled by car by Black Isle residents is approximately 94.5 million miles. The main ambition of the project is to reduce car travel by Black Isle residents by

1%, which would save around 945,000 miles – approximately one million miles. This will be achieved by encouraging cycling and walking through workshops and active travel maps, improving access to public transport and promoting lift-sharing.

1.3. Survey design

The first phase of the Million Miles project was to conduct a survey of travel on the Black Isle, which would provide a baseline to project activities. The survey consisted of fifteen questions on the details of the household and travel behaviour. It was laid out on four pages over a double-sided A4 sheet (Figure 1.3.1.).

Black Isle "Million Miles" Travel Survey

Would you like to save money and use your car less? Transition Black Isle is a community group trying to help the Black Isle move to a low carbon society. We want to help reduce local residents' car use by a million miles a year – a mere % of mileage at present. We would like to make it easier to walk, cycle, use public transport or lift share when making journeys around the area. How do you travel at present? What would make it easier to leave your car at home more often? What improvements can be made to public transport on the Black Isle to help you do this? Would you prefer not to sit in traffic jams on the Kessock Bridge? We would like to hear your views. By taking part you could win a £30 voucher for spending at the Highland Bicycle Company in Inverness Place, Inverness.

Please could you take a few minutes to complete this survey. Once you've filled it in, you can:

- Post it to Transition Black Isle, c/o Stonebank, Culbokie, W7 6JH.
- Drop it at Munloch, Avoch, Fortrose or Muir of Ord Post Offices, Fortrose Library or the Cromarty Stores.
- Scan it and send it to energy@transitionblackisle.org
- Drop it in at the Transition Black Isle stand at one of the Black Isle community markets. Dates for the community markets are:

February	March	April
11 th - Cromarty 11.30-2.30	12 th - Cromarty	14 th - Cromarty
18 th - Fortrose 10-12	17 th - Fortrose	21 st - Fortrose
20 th - Kessock 10-12	21 st - North Kessock	23 rd - North Kessock

More copies of the survey are available from the Transition Black Isle website, www.transitionblackisle.org

Thank you for your help. We need as many surveys returned as possible so that we know what will really help to reduce the car miles on the Black Isle.

Household data

1. How many people are there in your household?

Age range	15 and under	17-25	26-45	46-65	Over 65
Male					
Female					

2. How many cars/vans does your household have?

Number of cars/vans	0	1	2	3	4	5 or more
Number						

3. How many bikes does your household have?

Adults	Number
Number	

4. Does anyone in your household have mobility problems? If so, please give details:

Travel habits

For all the questions in this section, include all journeys, for work, leisure or other reasons. The bus ride to school, a walk in the woods, commuting to work or visiting friends and relatives - they all count

5. In 2011, how many flights were taken by your household (show the total number of seats taken)?

Domestic	European	Long-haul
Number		

6. In a typical year, how many miles are travelled by the cars in your household?

0-4,999	5,000-9,999	10,000-14,999	15,000-19,999	20,000-24,999	25,000 or over
Number					

7. How often do members of your household use public transport last week? Count once for each stage bus and each train journey, so for example a child goes to an art from school each day by school bus would be 20 journeys.

Number of times last week	Less than 10 miles	10-19 miles	20 miles or more
Walking			
Cycling			

8. How often do members of your household walk or cycle last week? As before, count once for each stage journey and each member travelling.

Number of times last week	Less than half a mile	Half a mile to under 1 mile	2-5 miles	More than 5 miles
Walking				
Cycling				

Travel attitudes

9. How interested are you in reducing your car mileage (please tick one box)?

Not interested	1	2	3	4	Very interested	5
Number						

10. If you are interested in reducing your car mileage, what is the main reason (please give one reason)?

Concern about climate change

Saving money

Better quality of life

Concern about wildlife

Health reasons

Prefer being able to walk/read while travelling

Other (please detail below):

11. Would any of the following help you reduce your mileage (tick as many as are appropriate)?

More frequent buses	A lift share scheme to link with others during the same journey	Charger buses	A support group to cycle or walk with	More frequent trains	Better information about public transport	Charger trains	A park and ride scheme to Inverness	Bike storage at bus stops/stations	Access to a bike	Bike parking facilities at destination (please say where)	Other (please list)

Final Remarks

12. Tick here if you'd like to be kept informed about the Transition Black Isle "Million Miles" project. (If so, please make sure you completed the contact details below.)

13. Tick below and write your contact details below if you're interested in helping with the project.

As a volunteer	As a part-time employee	As a full-time employee

15. Would you be prepared to participate in further surveys as our project continues? Tick below

Yes	No

If so, please make sure you give contact details below.

If you want to participate in a draw to win a £30 voucher from the Highland Bicycle Co please give your contact details:

Name:

Phone number:

E-mail address:

Our data protection policy is that personal details will be destroyed after the prize draw, except for those who agree to participate in subsequent surveys, or who are interested in receiving more information. Personal details will not be shared with any other organisation.

Transition Black Isle is a Registered Scottish Charity, number SC046205, and a voluntary initiative. Registered in Scotland number 292626.

Registered Office: Clachra, Avoch Road, North Kessock, Inverness, IV1 3AG

www.transitionblackisle.org

Figure 1.3.1: Travel survey used to establish baseline for Transition Black Isle's Million Miles project.

Approximately 1,800 copies of the questionnaire were distributed between February and June 2012 at schools, markets and shops around the Black Isle. The survey could be returned directly to TBI by post, email or the group's stand at one of the community markets in Cromarty, North Kessock or Culbokie. Completed surveys could also be dropped off at the Fortrose Library, Cromarty Stores or the Post Offices in Muir of Ord, Munloch, Fortrose and Avoch. All those respondents who provided their contact details were entered into a prize draw – for two £30 vouchers donated by the Highland Bicycle Company in Inverness and Stagecoach – that was held at the internal launch for the project in North Kessock in June 2012. A total of 144 questionnaires were returned, representing a response rate of around 8%. The responses to the survey have been summarised in this report by the following themes:

- Survey respondents;
- Car travel;
- Active travel;
- Public transport;
- Air travel;
- Project participation.

2. Survey respondents

2.1. Ages and gender of household occupants

The 144 households responding to the survey had a total of 387 occupants (equivalent to 2.7 people per house). There was an even split between males and females (Figure 2.1.1.). Children (aged 16 and under) were present in 26% of the households – accounting for 23% of the occupants in all of the households. Elderly people (aged 66 and over) were in 29% of households, but only accounted for 12% of all occupants. People aged 46-65 accounted for 40% of all occupants.

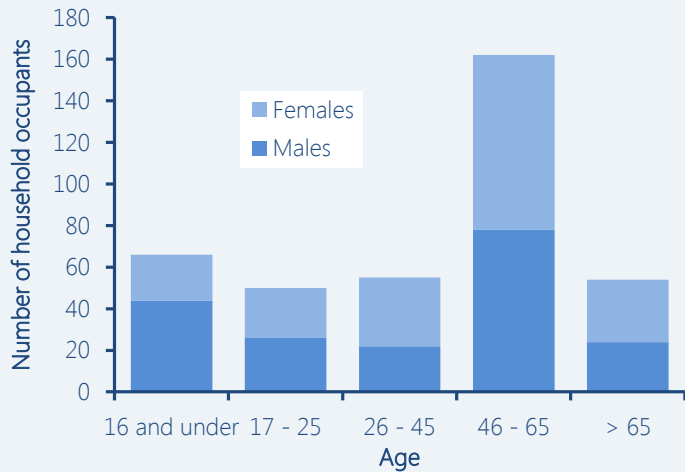


Figure 2.1.1: Ages and gender of occupants of households participating in the travel survey.

Household occupants

40% of occupants aged 46-65
10% of households have an occupant with a mobility problem

2.2. Mobility issues for household occupants

Of the 144 households responding to the survey, 10% stated that at least one of the occupants had a mobility problem. Half of those households included at least one person aged 66 or over).

3. Car travel

3.1. Car ownership

Assuming that the 22 participants who did not provide a response to the question on car ownership own one car or van (see Section 3.2), 97% of households have at least one vehicle (Figure 3.1.1). Furthermore, 6% of participating households own three or more vehicles – one respondent stated they owned seven cars. However, the majority of households responding to the survey own just one car (78%).

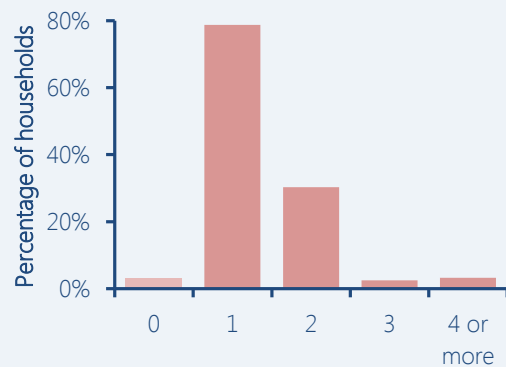


Figure 3.1.1: Number of cars in each household.

3.2. Annual car mileage

Participants were asked how many miles were driven in the household in the last year in classes of 5,000 miles (Figure 3.2.1). Out of the 144 respondents, 140 selected one of these categories (i.e. the four participants who did not respond were those that did not own cars). Only 5% of respondents stated that they didn't drive at all in the last year, but as many participants selected the maximum range available (25,000+ miles). The most frequently chosen category was 10,000-14,999 miles (38% of respondents).

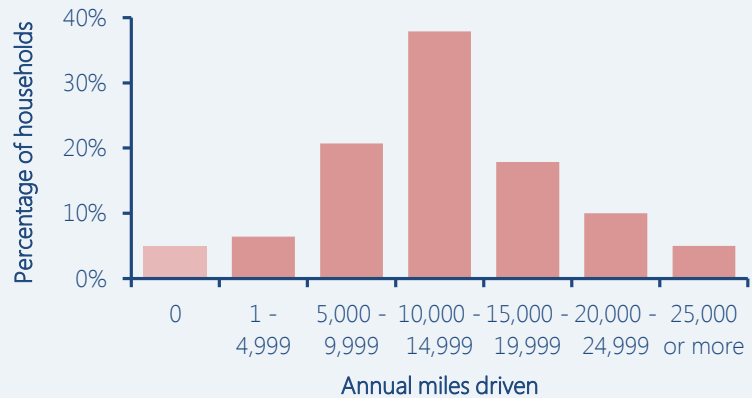


Figure 3.2.1: Total number of miles driven per household a year.

Taking the midpoint of each category as the average number of miles driven (i.e. 2,500 miles, 7,500 miles, etc.) and conservatively assuming that the midpoint for the 25,000+ category is 30,000, then the average mileage driven by each household that drove in 2011 was 13,613 miles a year.

Car travel
 97% of households own at least one car
 Average annual mileage of 13,613 miles per household

4. Public transport

Public transport
 58% of households travelled by public transport during the preceding week
 Average of 6.7 journeys

In the week prior to being surveyed, 58% of respondents travelled by at least one form of public transport (i.e. train, bus or coach). A total of 564 journeys were made (=6.7 per household), the vast majority of which were by bus (75%).

4.1. Bus travel

Exactly half of the households (i.e. 50%) responding to the questionnaire had at least one occupant who travelled by bus in the previous week. A total of 422 journeys were taken by bus – mostly for short trips (Figure 4.1.1.) – equivalent to 5.9 journeys per household.

Bus travel
 50% of households travelled by bus during the preceding week
 Average of 5.9 journeys
 Average distance of 25 miles



Figure 4.1.1: Number of journeys of different lengths taken by bus in the week before the survey.

Using the midpoint of each of the first two categories as the average journey distance (i.e. 15 miles and 115 miles) and conservatively assuming that the midpoint for the 200 miles or greater category is 250 miles, the weighted average distance for each journey travelled by bus was 25 miles. This means that the average total distance travelled by households on buses in the week prior to the survey was 148 miles.

4.2. Coach travel

Coach travel
 8% of households travelled by coach during the preceding week
 Average of 1.6 journeys
 Average distance of 117 miles

Only a small proportion (8%) of the households participating in the survey had at least one occupant who travelled by coach in the previous week and only 19 journeys were taken (Figure 4.2.1.). This is equivalent to only 1.6 journeys for each household that travelled by coach.

Taking the same midpoints used to estimate distances travelled by bus (i.e. 15 miles, 115 miles and 250 miles), the weighted average distance for each journey travelled by coach was 117 miles, suggesting that coaches tend to be used for longer journeys than buses. Therefore, the average overall distance travelled on coaches by households during the week before the survey was 185 miles.

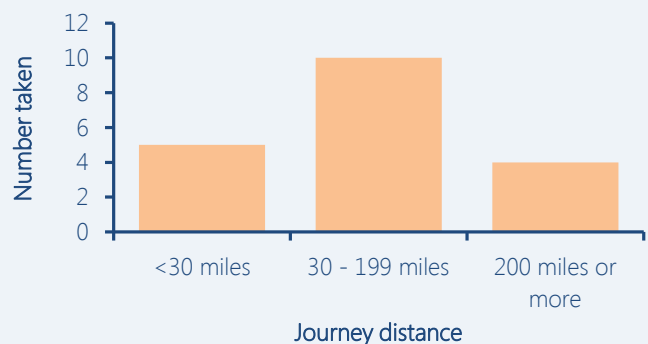


Figure 4.2.1: Number of journeys of different lengths taken by coach in the week before the survey.

4.3. Train travel

Over a quarter of participating households (27%) had at least one occupant who travelled by train in the week before the questionnaire was completed. A total of 123 journeys were taken by train (Figure 4.3.1.), which is equivalent to 3.2 journeys per household.

Train travel
 27% of households travelled by train during the preceding week
 Average of 3.2 journeys
 Average distance of 94 miles



Figure 4.3.1: Number of journeys of different lengths taken by train in the week before the survey.

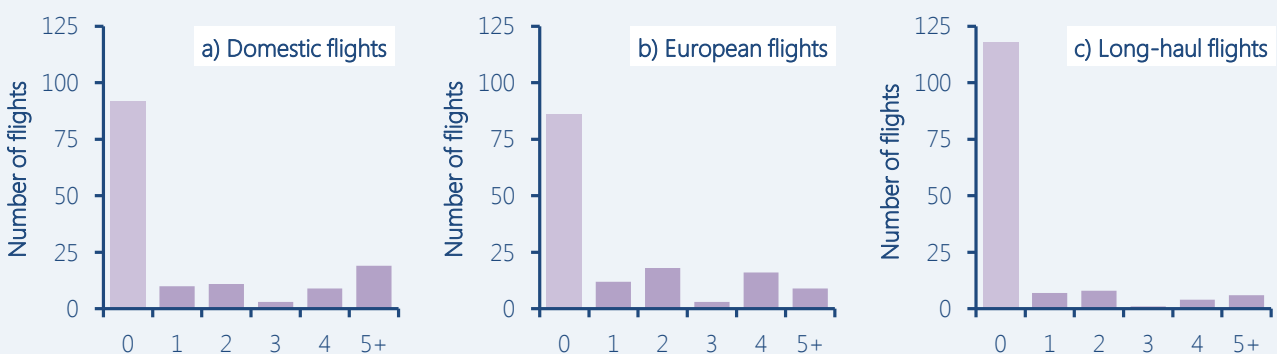
Using the same midpoints for estimating bus and coach travel distances (i.e. 15 miles, 115 miles and 250 miles), the weighted average distance for each train journey taken was 94 miles. This means that the average total distance travelled by each household on trains in the week prior to the survey was 297 miles, significantly further than the average total distances travelled by bus and coach.

5. Air travel

5.1. Air travel

During 2011, 63% of the households participating in the survey took at least one flight (domestic = 36%; European = 40%; long-haul = 18%; Figures 5.1.1a-c). In total, 605 flights were taken. Domestic flights were taken by 36% of participating households and a total of 278 journeys were made (equivalent to 5.3 journeys for each household that flew). Some households made significantly more journeys than the average: two households took 30 domestic flights during 2011. A total of 203 flights were made to Europe by 40% of participating households, which is equivalent to 4.0 journeys for per household). One household took 46 European flights in 2011. Long-haul flights were taken by 18% of participating households and a total of 97 journeys were made (equivalent to 3.7 journeys for each household that flew).

Air travel
 63% of households flew during 2011
 Average of 5.3 domestic flights
 Average of 4.0 European flights
 Average of 3.7 long-haul flights



Figures 5.1.1a-c: Number of seats taken by participating households on domestic, European and long-haul flights during 2011.

The Defra Reporting Guidelines include average emission factors for flights of varying distances: domestic flight = 288 miles; European flight = 689 miles; long-haul flight = 4,028 miles. Multiplying the number of flights by these distances, the average total distance travelled by each household is 1,538 miles on domestic flights, 2,730 miles on European flights and 15,026 miles on long-haul flights.

6. Active travel

Almost all of the households participating in the survey made at least one journey by active travel during the preceding week (92%). A total of 1,467 journeys were made (=11.1 per household), the vast majority of which were walked (82%).

Active travel
 92% of households had at least one active travel journey during the preceding week
 Average of 11.1 journeys

6.1. Walked journeys

Walking
 86% of households walked in previous week
 Average of 9.7 journeys
 Average distance of 12 miles

In the week prior to being surveyed, the vast majority (86%) of participating households had at least one occupant who walked for a minimum of one journey (Figure 6.1.1.). In total, 1,197 journeys were walked in the previous week, which is equivalent to 9.7 journeys per household.

Using the midpoint of each of the first three categories as the average journey distance (i.e. 0.25 miles, 1.25 miles and 3.50 miles) and then conservatively assuming that the midpoint for the 5 miles or greater category is 7.5 miles, the weighted average distance for each journey walked was 1.3 miles. This means that the average total distance that each participating household walked in the week prior to the survey was 12 miles.

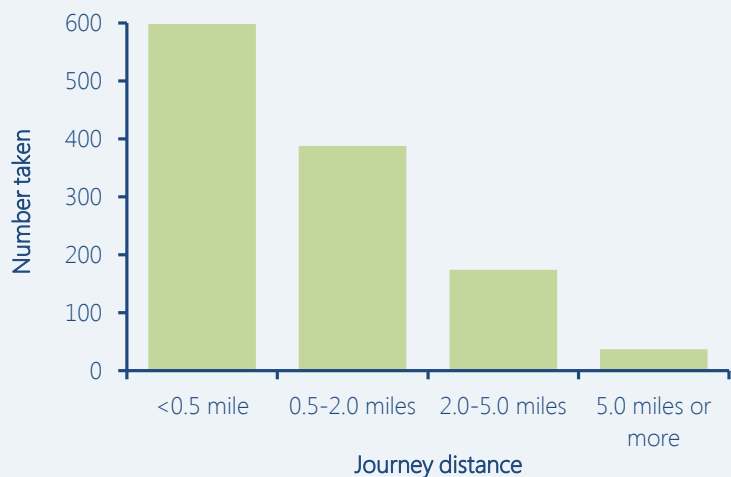


Figure 6.1.1: Number of journeys of different lengths walked in the week before the survey.

6.2. Bike ownership

The majority of participating households have access to bikes (83%): 82% have at least one adult bike and 27% have at least one children’s bike. The total number of bikes owned by all of the households is 407; each cycling household has an average of 2.7 adult bikes and 2.3 children’s bikes (Figure 6.2.1.). However, it is likely that a proportion of these bikes are not getting regular use. For example, 29% of the children’s bikes are owned by households that have no occupants under 16 years of age. Many households own large numbers of bikes: one respondent stated they owned eleven adult bikes and ten children’s bikes.

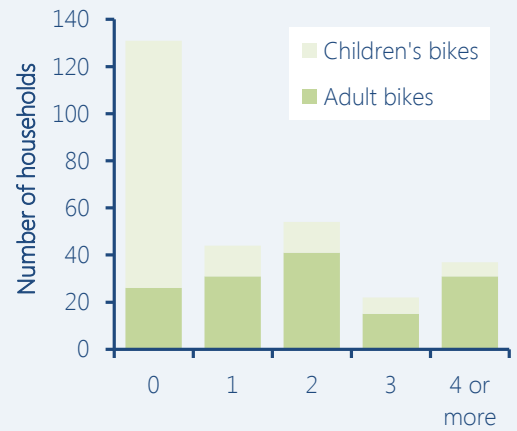


Figure 6.2.1: Number of adult and children’s bikes in each household.

6.3. Cycled journeys

In the week before completing the questionnaire, 41% of households had at least one occupant who cycled (Figure 6.3.1.). In total, 270 journeys were made by bike in the previous week, which is equivalent to 4.6 journeys for each household.

Cycling

83% of households own at least one bike
41% of households cycled in previous week
Average of 4.6 journeys
Average distance of 3.1 miles

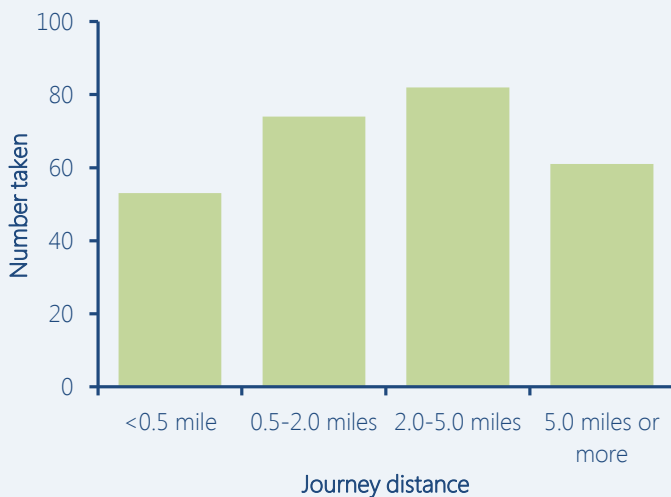


Figure 6.3.1: Number of journeys of different lengths cycled in the week before the survey.

Using the same midpoints used to estimate walking distances in Section 6.1 (i.e. 0.25 miles, 1.25 miles, 3.50 miles and 7.50 miles), the weighted average distance for each journey made by bike was 3.1 miles. Therefore, the average total distance that each participating household cycled during the week preceding the survey was 14 miles and the furthest any household cycled was 60 miles (made up of seventeen journeys between two and five miles long).

7. Project participation

7.1. Interested in reducing car mileage

There is a strong interest in reducing the number of miles driven by car amongst the households we surveyed (Figure 7.1.1). More than half (52%) of the participating households stated that they were very interested in reducing their mileage. Indeed, only 11% of respondents were not interested (i.e. selected option 1 or 2) and 71% were interested (i.e. selected option 4 or 5).

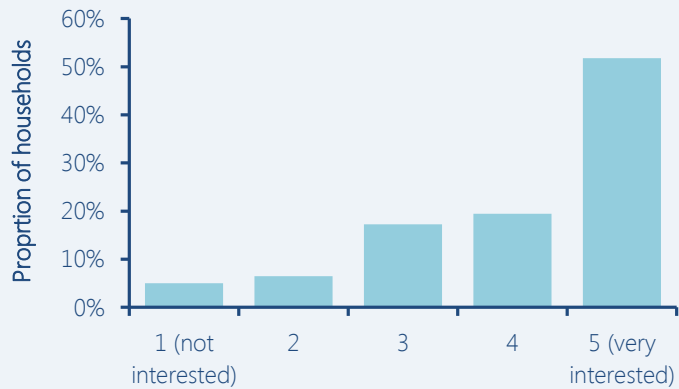


Figure 7.1.1: Degree of interest in reducing car mileage.

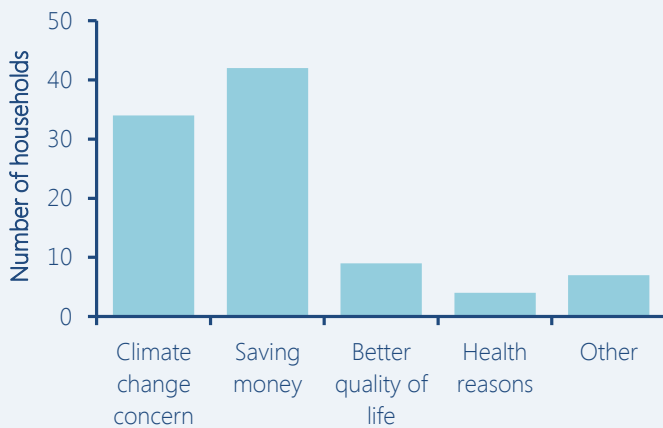


Figure 7.1.2: Reason for interest in reducing car mileage.

When asked to select the main reason why they were interested in reducing car mileage, only two-thirds (67%) of all of the households surveyed provided a valid response (many respondents ticked multiple reasons). The most common reasons were saving money (44%) and concern over climate change (34%; Figure 7.1.2.). The only other options that were frequently selected were improved quality of life (9%) and health (4%). Two other reasons that were prompted in the questionnaire were concern over wildlife and preference to work and read while travelling, but these were the primary reasons for only 3% of respondents. Just 4% of responding households gave other reasons for being the main driver for reducing car mileage.

Interest in reducing mileage

71% of households are interested in reducing their car mileage

Key motivations are saving money (44%) and concern over climate change (34%)

7.2. Making travel more sustainable

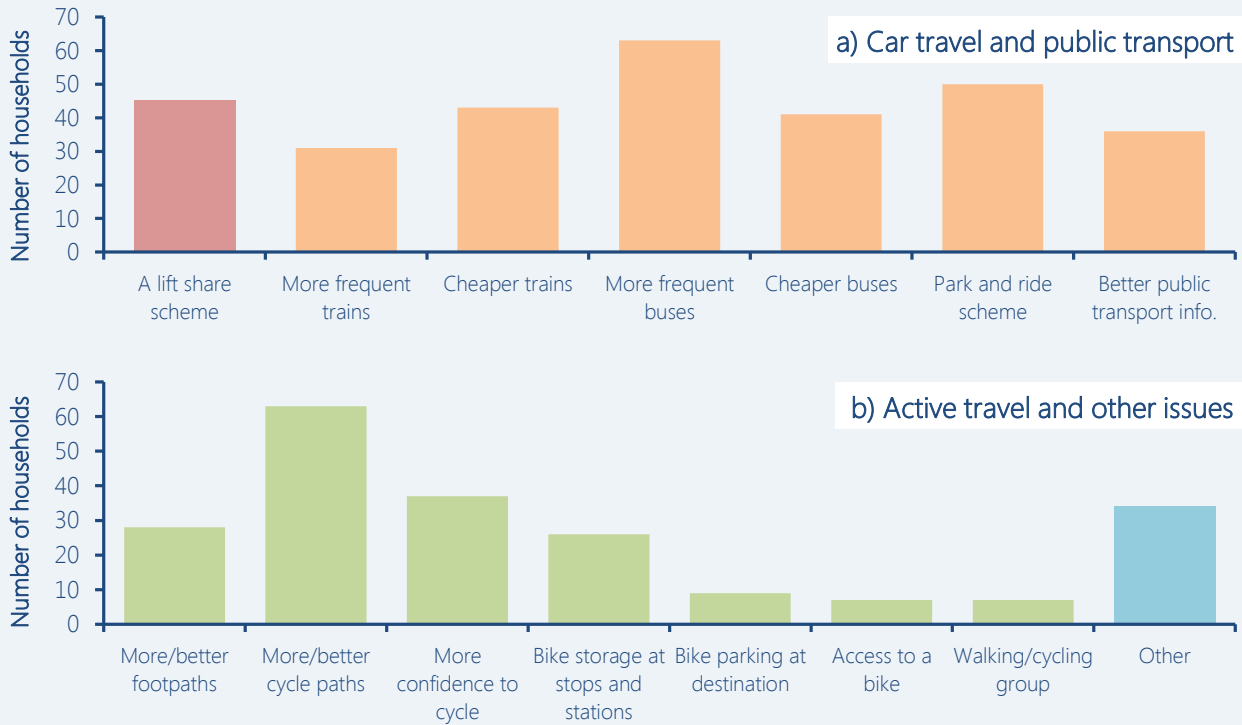
To help the Million Miles project plan how to make transport more sustainable on the Black Isle, participating households were asked to select from fourteen options that would help them reduce the

What would help reduce mileage?

No single issue would help

Top two factors are more/better buses and more/better cycle paths (both 12%)

number of miles they travel by car. In total, 520 options were selected by the households responding to the question (88% of participating households), which are categorised by those relating to car travel, public transport and active travel in Figures 7.2.1a&b. There was also the option to provide alternative factors to help lower mileage by selecting “other”.



Figures 7.2.1a&b: Issues relating to car travel, public transport, active travel and other options that respondents stated would help them reduce car mileage.

No single issue dominated the responses from participating households, suggesting that the barriers to people driving less are not clear. The two most commonly selected options were more / better cycle paths and frequent buses (both 12%). Although the number of options available relating to public transport and active travel were similar, more issues were selected for public transport than active travel (51% versus 34%). Also, 7% of respondents selected “other” factors and noted a range of barriers (e.g. not allowing bikes on buses and roads in poor condition).

7.3. Involvement in Million Miles project

Just over one third (37%) of the households responding to the survey stated that they would like to be kept informed about how the Million Miles project progresses. In addition, 60% of respondents were willing to participate in future surveys (68% left contact details), which will be valuable when Transition Black Isle monitors the progress of the

Project involvement
 60% of respondents willing to be re-surveyed
 14% of respondents interested in volunteering

project. There was also interest in having direct involvement in the project; 14% of respondents were willing to help as volunteers and 8% were interested in working as employees (e.g. Community Cycling Trainers).

8. Baseline estimates

8.1. Average total distance travelled per household

The average distances calculated for each mode of travel in Sections 3-6 were for each of the households that travelled by that mode, rather than the average for all of the households responding to the survey. To estimate the weighted average distance travelled by the participating households, these average distances must be multiplied by the proportion of the households that travelled by each mode and annualised if the survey period was one week (i.e. public transport and active travel).

Total distance travelled
 The total average distance travelled per household is 27,017 miles
 Car travel accounts for 48% of the total distance

Table 8.1.1.: Weighted average distances travelled by all households (HHs) participating in Transition Black Isle’s travel survey, based on the proportion of households travelling by each mode of transport and the average distance travelled per household.

Travel category and mode		Proportion of HHs travelling by mode [A]	Distances travelled				Category %
			Average for each HH travelling by mode in period [B]	Weighted average for all participating HHs in period [AxB]	Weighted average for all participating HHs in one year	Mode %	
Car travel		95%	13,613 miles ^a	12,946 miles	12,946 miles	48%	48%
Public transport	Bus	50%	148 miles ^b	74 miles	3,851 miles	14%	33%
	Coach	8%	185 miles ^b	15 miles	800 miles	3%	
	Train	27%	297 miles ^b	81 miles	4,187 miles	16%	
Air travel	Domestic flight	36%	1,538 miles ^a	555 miles	555 miles	2%	16%
	European flight	40%	2,730 miles ^a	1,100 miles	1,100 miles	4%	
	Long-haul flight	18%	15,026 miles ^a	2,720 miles	2,720 miles	10%	
Active travel	Walking	86%	12 miles ^b	11 miles	551 miles	2%	3%
	Cycling	41%	14 miles ^b	6 miles	307 miles	1%	
Total (per year)					27,017 miles		

^a Survey period of one year; ^b Survey period of one week.

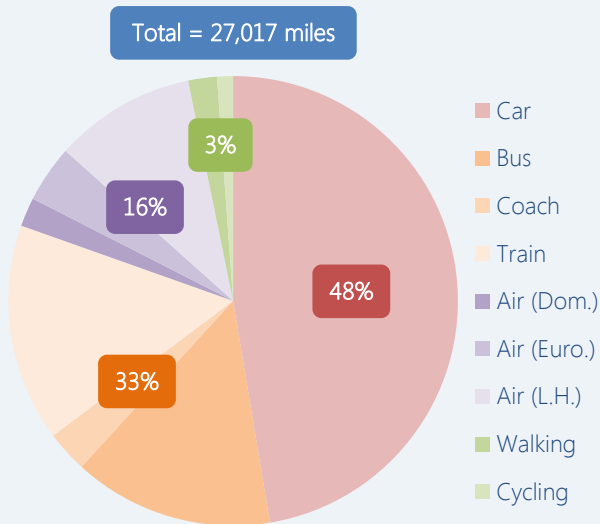


Figure 8.1.2: Percentage weighted average distances travelled by all participating household by each mode of transport (total for categories inset).

Table 8.1.1 lists the weighted average distances for the nine travel modes included in the questionnaire, together with the proportion of the total contributed by each mode and category. The total average distance travelled by each household is estimated to be 27,017 miles. Car travel contributes more miles than any other category (48% of total); travel by public transport accounts for one-third of the total distance travelled but active travel only accounts for a fraction of the total (summarised in Figure 8.1.2).

8.2. Greenhouse gas emissions from average household travel

The greenhouse gas emissions from household travel can be calculated by multiplying the weighted average annual distances calculated for each mode of travel in Section 8.1 by the appropriate emissions factor from the [Defra Reporting Guidelines](#). Table 8.2.1 lists the weighted average distance travelled by each transport mode, the relevant emissions factor and the corresponding greenhouse gas emissions (also summarised in Figure 8.2.2).

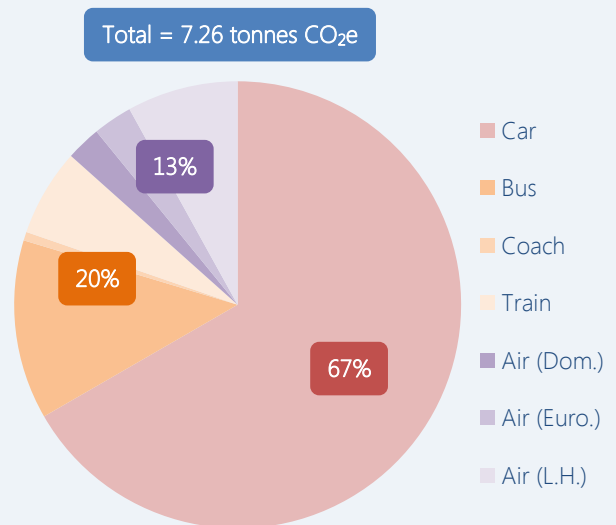


Figure 8.2.2: Percentage emissions from weighted average distance travelled by all participating household by each mode of transport (total for categories inset).

Emissions from total distance travelled
 The emissions from the total average distance travelled per household come to 7.26 tonnes CO₂e
 Car travel accounts for 67% of the total emissions

The total annual emissions from travel by the average household come to 7.26 tonnes of greenhouse gases. Car travel accounts for two-thirds of the total footprint (67%), despite contributing to less than half of the total number of miles travelled. Active travel is assumed to give rise to no greenhouse gas emissions.

Table 8.2.1.: Greenhouse gas emissions from weighted average distances travelled by all households (HHs) participating in Transition Black Isle’s travel survey (based on the Defra Reporting Guidelines).

Travel category and mode		Weighted average for all participating HHs in one year	Greenhouse gas emissions (from Defra Guidelines)				
			Description	CO ₂ e per mile	CO ₂ e per HH in one year	Mode %	Category %
Car travel		12,946 miles	Average car (unknown fuel)	0.383kg	4,874kg	67%	67%
Public transport	Bus	3,851 miles	Local bus (not London)	0.241kg	929kg	13%	20%
	Coach	800 miles	Coach	0.056kg	45kg	1%	
	Train	4,187 miles	National rail	0.108kg	452kg	6%	
Air travel	Domestic flight	555 miles	Domestic (average)	0.324kg	180kg	3%	13%
	European flight	1,100 miles	Short-haul international (average)	0.185kg	203kg	3%	
	Long-haul flight	2,720 miles	Long-haul international (average)	0.212kg	575kg	8%	
Active travel	Walking	551 miles	Active travel is assumed to emit zero greenhouse gas emissions				
	Cycling	307 miles					
Total (per year)				7.26 tonnes			

9. Next steps

9.1. Revised project target

The core aim of the project is to reduce car travel amongst Black Isle residents by 1%, which was originally estimated to be equivalent to just under one million miles for 6,300 households (as described in Section 1.2). With the weighted annual mileage derived from our survey at 12,946 miles (Table 8.1.1), the total distance travelled by car by Black Isle residents can now be revised to

approximately 81,560,000 miles. A 1% reduction in car travel would now be equivalent to 815,600 miles and maintaining the ambition of saving 1,000,000 miles would represent a decrease of 1.2%. We will continue to complete travel surveys to provide a better understanding of travel behaviour as the project continues.

9.2. Amendments to survey design

Although the survey has provided Transition Black Isle with valuable information regarding the travel behaviour of local households, there are some issues that led to questions being answered incorrectly or missed altogether. Improving the design of the questionnaire would reduce error rate and provide more accurate data from which stronger conclusions could be drawn.

➤ *Changes to layout*

Re-ordering some of the survey questions may reduce the chances of them being accidentally missed by respondents. For example, the questions about car mileage and ownership could be consecutive. Breaking the questions down into clearer sections may also reduce error rate.

➤ *Improving clarity*

Many respondents completed some of the questions incorrectly. Valid responses to the question asking about the principle reason for interest in reducing mileage (Section 7.1) were received from only two-thirds of participating households, which was largely because many respondents gave multiple answers. In addition, questions asking for number of journeys in the last week (i.e. Sections 4.1, 4.2, 4.3, 6.1 & 6.3) were sometimes ticked. Similarly, participants were asked how many seats were taken on single flight journeys; if a respondent for a household with four occupants thought that they were declaring that one return flight was taken by the family, this would underestimate the total distance flown by a factor of eight. Error rate could be reduced by ensuring consistency where possible and giving strong emphasis by underlining certain question elements. There may also be a need to distinguish between personal journeys and work-related travel: one respondent travelled thousands of miles by public transport every week because he worked as a bus driver.

➤ *Additional information*

More questions could have helped Transition Black Isle determine the best ways of making travel more sustainable. Some of these would be quick to complete but be very useful to the Million Miles project (e.g. community that the household lives in, how respondent heard about the survey). Various modes of transport were missing from the survey altogether (e.g. motorbike, taxi, ferry) some of which could have a significant impact on the total distance travelled. No questions were asked about car occupancy, which would

have been directly relevant to lift-sharing. Knowing the number of journeys of different length taken by car would be helpful in determining opportunities for modal shift (e.g. walking for car journeys less than one mile). It would be interesting to know what the most common journeys are for certain communities (e.g. 75% of respondents in North Kessock travel to Inverness every day), as it may influence project activities. Although less directly related to sustainable travel, it would have been useful to know how about levels of activity and exercise as one of the outcomes for the Million Miles project is improved health through active travel.

➤ *Prioritising key questions*

The survey is currently designed to capture all travel by households on the Black Isle. Although it is useful to consider travel behaviour in full context (e.g. car journeys account for 48% of all miles travelled by a household), the Million Miles project is focused on finding sustainable options for local travel. Therefore, it may be more worthwhile asking about local travel in more detail (e.g. most frequent journey) than estimating the total distance travelled, especially when it is impractical for an individual to recall all journeys made in a given period. Focusing on local transport issues may also help the project engage with communities. Given that error rate is likely to be proportional to survey length, it may be necessary to substitute questions.

Transition Black Isle aims to redesign the survey taking the above concerns into account. The balance will be between gathering the most important information and mitigating potential errors by respondent. Travel diaries are hoped to be an important part of the Million Miles project. One solution may be to include the more detailed questions in the travel diary to obtain estimates of total distance travelled and to condense the existing travel survey into a much shorter questionnaire that only covers the most relevant issues (e.g. annual car mileage, help to reduce car travel, public transport usage, journeys made by active travel). This would make the calculation of total distance travelled more straightforward as there would be less need to extrapolate from weekly journeys and midpoints of distance categories. The travel diary would also be an opportunity to synchronise the questions with [national transport statistics](#), making it easier to put the conclusions into context.